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| 10/008,763      | 11/30/2001  | Raffi Codilian       | K35A0999            | 9233             |

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LAKE FOREST, CA 92630

EXAMINER

SLAVITT, MITCHELL R

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2651

DATE MAILED: 02/17/2004

8

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/008,763

Applicant(s)

CODILIAN, RAFFI

Examiner

Mitchell R Slavitt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14 and 27-30 is/are rejected.
- 7) ☒ Claim(s) 13, 15-26 and 31-33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Serrano et al. (Serrano) in view of Dunphy, Jr. et al. (Dunphy).

Regarding claim 1, Serrano teaches a disk with concentric tracks in Fig 1. A pivotable actuator is taught at col 2, lines 19-23. A transducer disposed on the actuator to be positioned over a selected track is taught at col 2, lines 31-35. A controller controlling the movements of the transducer is taught in Fig 1. A shock detection system is taught at col 3, lines 54-58.

Serrano does not teach a shock event logger. Dunphy teaches this feature at col 12, line 65 to col 13, line 1. At the time of the invention it would have been obvious to one of ordinary skill in the art to modify Serrano's shock detection system with maintaining a log as taught by Dunphy, the basis for the combination would be to detect recurring types of shocks that could be susceptible to correction in advance of a future shock by studying their source and nature having maintained a historical record of such events.

Regarding claim 2, Dunphy teaches a history log (404) in Fig 4.

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Regarding claims 3-5 and 28-30, Dunphy does not state the memory is non-volatile, nor a semiconductor memory or a portion of the rotatable disk. These features are well known in the art and are routinely used for "management data" to support the operation of the disk drive. At the time of the invention it would have been obvious to one of ordinary skill in the art to modify Dunphy's shock event logger with the cited features to provide the current state of the art regarding placing "management data" in non-volatile memory and available for future use.

Regarding claims 6-9, Serrano teaches at col 4, lines 1-18 a shock sensor signal processor and accelerometers that can be both linear and rotational.

Regarding claim 27, Serrano teaches at col 4, lines 1-11, monitoring a signal from an accelerometer to determine whether such signal is the result of a shock. Dunphy teaches the recording of information at col 12, line 65 to col 13, line 1. At the time of the invention it would have been obvious to one of ordinary skill in the art to modify Serrano's shock detection system with maintaining a log as taught by Dunphy, the basis for the combination would be to detect recurring types of shocks that could be susceptible to correction in advance of a future shock by studying their source and nature having maintained a historical record of such events.

3. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Serrano and Demphy in view of Harwood et al. (Harwood). Serrano and Demphy teach all the elements of the claim except a shock detector comprising a back emf signal processor. Harwood teaches this feature in his Abstract. At the time of

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the invention it would have been obvious to one of ordinary skill in the art to modify the teaching of Serrano and Demphy with the teaching of applying the back emf to determine whether a shock has been detected. The basis for the combination being that when there is a shock or jolt to the disk drive or a component such as the VCM, a back EMF arises which is in proportion to the change in the magnetic flux through the coil, which is in approximate proportion to the velocity of the head to which the VCM is attached. Therefore, applying the principles of back emf would allow for a sensor system for shocks.

4. Claims 11-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Serrano and Demphy in view of Gregg et al. (Gregg).

Regarding claims 11-12, Serrano and Demphy teach all the elements of the claim except a position error signal processor where there is a deviation from a reference position and where a predetermined threshold value is exceeded. Gregg teaches these features in his Abstract. At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the teaching of Serrano and Demphy with the teaching of recognizing a shock to the disk drive as evidenced by a significant position error signal. The reason for this is a shock to the disk drive would in all probability cause the transducer to be positioned significantly from its intended position and therefore the detection system would recognize this as a shock.

Regarding claim 14, Serrano and Demphy teach all the elements of the claim except the logger records the position error signal to the non-volatile

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memory. The claim is rejected for the same reason as stated in response to claim 3.

***Allowable Subject Matter***

5. Claims 13, 15-26, and 31-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mitchell R Slavitt whose telephone number is (703) 305-2809. The examiner can normally be reached on M-F (6:30-4:00), 2nd Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R Hudspeth can be reached on (703) 308-4825. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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2/5/04



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